DAIKIN

altherma

Heating

Technical Data

DaikinAltherma low temperature monobloc

EEDEN12-725

EDHQ-BB6W1

TABLE OF CONTENTS

EDHQ-BB6W1

1 Features 2

2 Specifications 3
Technical Specifications 3
Electrical Specifications 4

3 Options 7
Options 7

4 Capacity tables 9
Heating Capacity Tables 9

5 Dimensional drawings 10
Dimensional Drawings 10

6 Piping diagrams 11
Piping Diagrams 11

7 Wiring diagrams 12
Wiring Diagrams - Three Phase 12

8 External connection diagrams 14
External Connection Diagrams 14

9 Sound data 15
Sound Pressure Spectrum - Heating 15
Sound Pressure Spectrum Quiet Mode 16

10 Installation 17
Installation Method 17

11 Operation range 18
Operation Range 18
Correction Factors 19

12 Hydraulic performance 20
Static Pressure Drop Unit 20

1 Features

- Three phase heating only monobloc
- Energy efficient heating only system based on air to water heat pump technology
- H2O piping between outdoor unit and indoor heat emitters
- Low energy bills and low CO2 emissions
- Eco-label certified
- Built-in electric back-up heater as additional heating during extremely cold outdoor temperature
- Inverter controlled scroll compressor

INVERTER

2 Specifications

2-1 Technical Specifications					EDHQ011BB6W1	EDHQ014BB6W1	EDHQ016BB6W1
Heating capacity	Nom.			kW	11.20 (1) / 10.87 (2)	14.00 (1) / 13.10 (2)	16.00 (1) / 15.06 (2)
Capacity control	Method				Inverter controlled		
Power input	Heating	Nom.		kW	2.60 (1) / 3.21 (2)	3.30 (1) / 4.07 (2)	3.81 (1) / 4.66 (2)
COP					4.31 (1) / 3.38 (2)	4.24 (1) / 3.22 (2)	4.20 (1) / 3.23 (2)
Casing	Colour				Ivory white		
	Material				Painted galvanized steel plate		
Dimensions	Unit	Height		mm	1,418		
		Width		mm	1,435		
		Depth		mm	382		
	Packed unit	Height		mm	1,557		
		Width		mm	1,500		
		Depth		mm	430		
Weight	Unit			kg	180		
	Packed unit			kg	200		
Packing	Material				Wood / Carton / Plastic foil	Wood / Carton / Plastic foil	Wood / Carton / Plastic foil
	Weight			kg	20		
Heat exchanger	Length			mm	857		
	Rows	Quantity			2		
	Fin pitch			mm	1.4		
	Passes	Quantity			5		
	Face area			m^2	1.131		
	Stages	Quantity			60		
	Empty tubeplate hole	Quantity			0		
	Tube type				ø8 Hi-XSS		
	Fin	Type			WF fin		
		Treatment			Anti-corrosion treatment (PE)		
Pump	Type				Water cooled		
	Nr of speeds				2		
	Nominal ESP unit	Heating		kPa	54.5 (4) / 55.7 (8)	43.3 (4) / 47.1 (8)	34.0 (4) / 38.5 (8)
	Power input			W	210		
Expansion vessel	Volume			l	10		
	Max. water pressure			bar	3		
	Pre pressure			bar	1.0		
Fan	Type				Propeller fan		
	Quantity				2		
	Discharge direction				Horizontal		
	Air flow rate	Heating	High	m^3/min	90		
Fan motor	Quantity				2		
	Model				Brushless DC motor		
	Speed	Steps			8		
		Heating	Nom.	rpm	760		
	Output			W	70		
	Drive				Direct drive		
Compressor	Quantity				1		
	Model				JT1G-VDYR (S)		
	Type				Hermetically sealed scroll compressor		
	Output			W	2,200		
	Starting method				Inverter driven		
	Motor	Crankcase heater	Output	W	33		

2 Specifications

2-1 Technical Specifications					EDHQ011BB6W1	EDHQ014BB6W1	EDHQ016BB6W1
Operation range	Heating	Ambient	Min.	ºCWB	-15		
			Max.	ºCWB	35		
		Water side	Min.	ºC	15 (5)		
			Max.	ºC	55 (5)		
	Domestic hot water	Ambient	Min.	ºCDB	-15		
			Max.	ºCDB	43		
		Water side	Min.	ºC	25		
			Max.	ºC	80		
Water side Heat exchanger	Type				Brazed plate		
	Quantity				1		
	Water volume			l	1.01		
	Water flow rate	Heating	Nom.	l/min	32.1 (4) / 31.1 (8)	40.1 (4) / 37.6 (8)	45.9 (4) / 43.2 (8)
		Min.		l/min	16		
		Max.		l/min	58		
	Insulation material				Foamed polyurethane		
Refrigerant	Type				R-410A		
	Charge			kg	2.95		
	Control				Expansion valve (electronic type)		
	Circuits	Quantity			1		
Refrigerant oil	Type				Daphne FVC68D		
	Charged volume			l	1.0		
Sound power level	Heating	Nom.		dBA	64	65	66
Sound pressure level	Heating	Nom.		dBA	49 (3)	51 (3)	53 (3)
	Night quiet mode	Heating		dBA	42		43
Defrost method					Reversed cycle		
Defrost control					Sensor for outdoor heat exchanger temperature		
Water filter	Diameter perforations			mm	1		
	Material				Brass		
Water circuit	Piping connections diameter			inch	G 5/4" (female)		
	Piping			inch	5/4"		
	Safety valve			bar	3		
	Manometer				Yes		
	Drain valve / fill valve				Yes		
	Shut off valve				Yes		
	Air purge valve				Yes		
	Total water volume			l	5.5 (6)		
	Minimum water volume in the system			l	20 (7.0)		
Safety devices	Item	01			High pressure switch		
		02			Fan motor thermal protection		
		03			Fuse		

2-2 Electrical Specifications			EDHQ011BB6W1	EDHQ014BB6W1	EDHQ016BB6W1
Optional domestic hot water tank + Q2L	Wiring connections	Quantity	3G		
		Type of wires	For more details on voltage range and current refer to installation manual / Select diameter and type according to national and local regulations	For more details on voltage range and current refer to installation manual / Select diameter and type according to national and local regulations	For more details on voltage range and current refer to installation manual / Select diameter and type according to national and local regulations

2 Specifications

2-2 Electrical Specifications						EDHQ011BB6W1	EDHQ014BB6W1	EDHQ016BB6W1
Hydraulic component	Back-up heater current	Type				6W1		
		Power supply	Phase			3~		
			Frequency		Hz	50		
			Voltage		V	400		
		Running current	Back-up heater		A	8.7		
			Back-up heater + booster heater *V3		A	21.7 (8.7+13)		
			Back-up heater + booster heater *Z2		A	16.2 (8.7+7.5)		
		Minimum Ssc value	+EK^{o}V3		kVa	Equipment complying with EN/IEC 61000-3-12		
			+EK^{o}Z2		kVa	Equipment complying with EN/IEC 61000-3-12		
	Voltage range	Min.			%	-10		
		Max.			%	10		
	Wiring connections	Quantity				4G		
		Type of wires				Select diameter and type according to national and local regulations		
Compressor component	Main power supply	Name				W1		
		Phase				3N~		
		Frequency			Hz	50		
		Voltage			V	400		
	Voltage range	Min.			%	-10		
		Max.			%	10		
	Current	Nominal running current (RLA)	Heating		A	5.8 (4)		
		Maximum running current	Heating		A	14		
		Recommended fuses			A	20		
	Wiring connections	For power supply				See installation manual		
A3P	Wiring connections	Quantity				Depends on thermostat type, refer to installation manual		
		Type of wires				Select diameter and type according to national and local regulations / Voltage 230V / Maximum current: 100mA / Minimum: 0.75mm²	Select diameter and type according to national and local regulations / Voltage 230V / Maximum current: 100mA / Minimum: 0.75mm²	Select diameter and type according to national and local regulations / Voltage 230V / Maximum current: 100mA / Minimum: 0.75mm²
M2S	Wiring connections	Quantity				3G		
		Type of wires				Select diameter and type according to national and local regulations / Voltage 230V / Maximum current: 100mA / Minimum: 0.75mm²	Select diameter and type according to national and local regulations / Voltage 230V / Maximum current: 100mA / Minimum: 0.75mm²	Select diameter and type according to national and local regulations / Voltage 230V / Maximum current: 100mA / Minimum: 0.75mm²
M3S	Wiring connections	Quantity				3G or 4G		
		Type of wires				Select diameter and type according to national and local regulations / Voltage 230V / Maximum current: 100mA / Minimum: 0.75mm²	Select diameter and type according to national and local regulations / Voltage 230V / Maximum current: 100mA / Minimum: 0.75mm²	Select diameter and type according to national and local regulations / Voltage 230V / Maximum current: 100mA / Minimum: 0.75mm²

2 Specifications

2-2 Electrical Specifications			EDHQ011BB6W1	EDHQ014BB6W1	EDHQ016BB6W1
R5T	Wiring connections	Quantity	Wire included in option EKHWS*/EKHTS*		
		Type of wires	Wire included in option EKHWS*/EKHTS*		
Notes			The installer can reduce the capacity of the heater from 6 to 2kW. The current is then reduced from 8.7 to 5A. Please refer to the installation manual for instructions.		

Notes

(1) Condition 1: cooling Ta 35ºC - LWE 18ºC (DT = 5ºC); heating Ta DB/WB 7ºC/6ºC - LWC 35ºC (DT = 5ºC)

(2) Condition 2: cooling Ta 35ºC - LWE 7ºC (DT = 5ºC); heating Ta DB/WB 7ºC/6ºC - LWC 45ºC (DT = 5ºC)

(3) The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value depending on the distance and acoustic environment. Refer to sound spectrum drawing for more information.

(4) Condition: Ta DB/WB 7ºC/6ºC - LWC 35ºC (DT = 5ºC)

(5) 15ºC-25ºC: BUH only, no heat pump operation = during commisioning

(6) Including piping + PHE + back-up heater; excluding expansion vessel

(7) Excluding water volume in the unit. In most applications this minimum water volume will have a satisfying result. In critical processes or in rooms with a high heat load though, extra water volume might be required. Refer to operation range for more info.

(8) Condition: Ta DB/WB 7ºC/6ºC - LWC 45ºC (Dt=5ºC)

(9) PED: assembly = category I : excluded from scope of PED due to article 1, item 3.6 of 97/23/EC

(10) Power supply compressor compartment is for compressor, fan, pump and controller

(11) Power supply hydraulic compartment is for the electric heater. The optional domestic hot water tank has a separate power supply.

(12) In accordance with EN/IEC 61000-3-11, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys (system impedance) ≤ Zmax

(13) EN/IEC 61000-3-11: European/international technical standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated ≤ 75A

(14) Minimum Ssc value: Equipment complying with EN/IEC 61000-3-12: European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current \>16A and ≤ 75A per phase

(15) The installer can reduce the capacity of the heater from 6 to 2kW. The current is then reduced from 8.7 to 5A. Please refer to the installation manual for instructions.

3 Options

3 - 1 Options

EDHQ011-016BB6W1

Bivalent system

Space heating with an auxiliary boiler (alternating operation)

Space heating application by either the Daikin indoor unit or by an auxiliary boiler connected in the system. The decision whether either the E(D/B)* unit or the boiler will operate can be achieved by an auxiliary contact or an E(D/B)* indoor controlled contact.

This auxiliary contact can e.g. be an outdoor temperature thermostat, an electricity tariff contact, a manually operated contact, etc.

The E(D/B)* unit controlled contact (also called 'permission signal for the auxiliary boiler') is determined by the outdoor temperature (thermistor located at the unit).

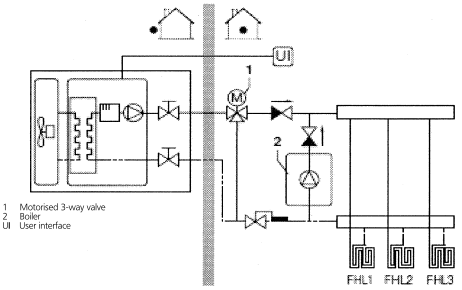
Bivalent operation is only possible for space heating operation, not for domestic water heating operation.

Domestic hot water in such an application is always provided by the domestic hot water tank which is connected to the Daikin unit.

The auxiliary boiler can be integrated in the pipework and in the field wiring according to the illustrations below.

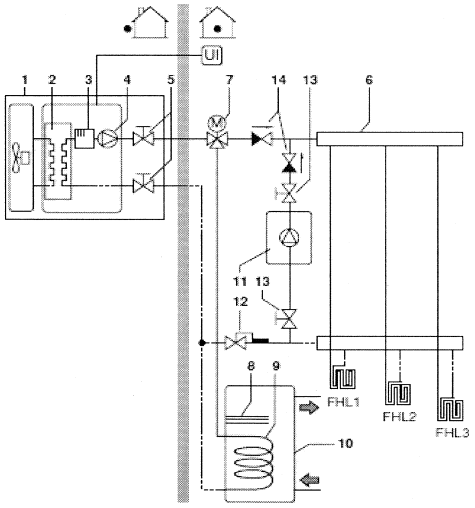
CAUTION

- Be sure that the boiler and the integration of the boiler in the system is in accordance with the applicable legislation.
- Always install a 3-way valve, even if no domestic hot water tank is installed. This to ensure that the freeze protection function can operate when the boiler is active.



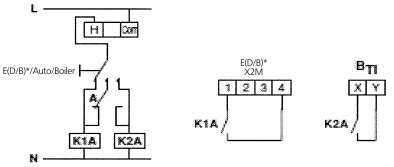
1 Motorised 3-way valve
2 Boiler
UI User interface

- Daikin can not be put responsible for incorrect or unsafe situations in the boiler system.



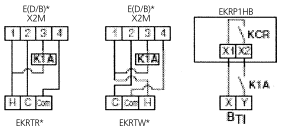
1 Unit
2 Heat exchanger
3 Backup heater [1]
4 Pump
5 Shut-off valve
6 Collector (field supply)
7 Motorised 3-way valve (delivered with the domestic hot water tank)
8 Booster heater [2]
9 Heat exchanger coil
10 Domestic hot water tank (optional)
11 Boiler (field supply)
12 Aquastat valve (field supply)
13 Shut-off valve (field supply)
14 Non-return valve (field supply)
FHL1_3 Floor heating loop (field supply)
UI User interface

Field wiring configuration A



BTI	Boiler thermostat input
A	Auxillary contact (normal closed)
H	Heating demand room thermostat (Optional)
Com	Common room thermostat (Optional)
E(D/B)*	Unit
auto	Automatic
boiler	Boiler
K1A	Auxillary relay for activation of E(D/B)* unit (Field supply)
K2A	Auxiliary relay for activation of boiler (Field supply)

Field wiring configuration B



BTI	Boiler thermostat input
C	Cooling demand room thermostat
H	Heating demand room thermostat (Optional)
Com	Common room thermostat (Optional)
K1A	Auxillary relay for activation of E(D/B)* unit (Field supply)
KCR	Permission signal for the auxillary boiler
E(D/B)*	Unit

Operation

- **Configuration A**
  When the room thermostat requests heating, either the E(D/B)* unit or the boiler starts operating, depending on the position of the auxillary contact (A).
- **Configuration B**
  When the room thermostat requests heating, either the E(D/B)* unit or the boiler starts operating, depending on the outdoor temperature (status of 'permission signal for auxillary boiler').
  When the permission is given towards the boiler, the space heating operation by the E(D/B)* unit will be automatically switched off.
  For more details see field setting [C-02-C-04]

Notice

- **Configuration A**
  Make sure that auxiliary contact (A) has sufficient differential or time delay so as to avoid frequent changeover between the E(D/B)* unit and the boiler. If the auxiliary contact (A) is an outdoor temperature thermostat, make sure to install the thermostat in the shade, so that it is not influenced or tuned ON/OFF by the sun.
  Configuration B
  Make sure that the bivalent hysteresis [C-04] has sufficient differential to avoid frequent changeover between the E(D/B)* unit and the boiler. As the outdoor temperature is measured via the unit's air thermistor, make sure to install the unit in the shade, so that it is not influenced by the sun. Frequent switching may cause corrosion of the boiler in an early stage. Contact the manufacturer of the boiler.
- During heating operation of the E(D/B)* unit, the unit will operate so as to achieve the target leaving water temperature as set on the user interface. When weather dependent operation is active, the water temperature is determined automatically depending on the outdoor temperature. During heating operation of the boiler, the boiler will operate so as to achieve the target leaving water temperature as set on the boiler controller. Never set the target leaving water temperature setpoint on the boiler controller above 55°C.
- Make sure to only have 1 expansion vessel in the water circuit. An expansion vessel is already premounted in the Daikin unit.

Notice

Make sure to configure the DIP switch SS2-3 on the PCB of the E(D/B)* switch box correctly.
For configuration B: Make sure to configure the field setting [C-02, C-03 and C-04] correctly.

Notice

Make sure return water to the E(D/B)* heat exchanger never exceeds 55°C.
For this reason, never put the target leaving water temperature set point on the boiler controller above 55°C and install an aquastat[a] valve in the return water flow of the E(D/B)* unit.
Make sure that the non-return valves (field supply) are correctly installed in the system.
Make sure that the room thermostat EKRTR or EKRTW are not frequently turned ON/OFF.
Daikin shall not be held liable for any damage resulting from failure to observe this rule.

a The aquastat valve must be set for 55°C and must operate to close the return water flow to the unit when the measured temperature exceeds 55°C. When the temperature drops to a lower level, the aquastat valve must operate to open the return water flow to E(D/B)* unit again.

Information

Manual permission towards the E(D/B)* unit on the boiler. In case only the E(D/B)* unit should operate in space heating mode, disable the bivalent operation via setting [C-02].
In case only the boiler should operate in space heating mode, increase the bivalent ON temperature [C-03] to 25°C.

3TW60699

3 Options

3 - 1 Options

EDHQ011-016BB6W1

Kit availability

		Altherma Monoblock / Low temperature											
		1-Phase						3-Phase					
		Zone 2			Zone 3			Zone 2			Zone 3		
		EDLQ***BB6V3			EDHQ***BB6V3			EDLQ***BB6W1			EDHQ***BB6W1		
		EBLQ***BB6V3			EBHQ***BB6V3			EBLQ***BB6W1			EBHQ***BB6W		
Reference	Description	011	014	016	011	014	016	011	014	016	011	014	016
KRP1HB	Digital I/O PCB (1)	0	0	0	0	0	0	0	0	0	0	0	0
*KBPHTH16A	Bottom plate heater	-	-	-	O(2)	O(2)	O(2)	-	-	-	O(2)	O(2)	O(2)
*KDK04	drain plug kit	-	-	-	O(2)	O(2)	O(2)	-	-	-	O(2)	O(2)	O(2
*KHWS150*3V3	Stainless domestic hot water tank 150L 1~230V	0	0	0	0	0	0	0	0	0	0	0	0
*KHWS200*3V3	Stainless domestic hot water tank 200L 1~230V	0	0	0	0	0	0	0	0	0	0	0	0
*KHWS300*3V3	Stainless domestic hot water tank 300L 1~230V	0	0	0	0	0	0	0	0	0	0	0	0
*KHWSU150*3V3	Stainless domestic hot water tank 150L 1~230V (only for UK)	0	0	0	0	0	0	0	0	0	0	0	0
*KHWSU200*3V3	Stainless domestic hot water tank 200L 1~230V (only for UK)	0	0	0	0	0	0	0	0	0	0	0	0
*KHWSU300*3V3	Stainless domestic hot water tank 300L 1~230V (only for UK)	0	0	0	0	0	0	0	0	0	0	0	0
*KHWS200*3Z2	Stainless domestic hot water tank 200L 2~400V	0	0	0	0	0	0	0	0	0	0	0	0
*KHWS300*3Z2	Stainless domestic hot water tank 300L 2~400V	0	0	0	0	0	0	0	0	0	0	0	0
*KHWE150*3V3	Enamel domestic hot water tank 150L 1~230V	0	0	0	0	0	0	0	0	0	0	0	0
*KHWE200*3V3	Enamel domestic hot water tank 200L 1~230V	0	0	0	0	0	0	0	0	0	0	0	0
*KHWE300*3V3	Enamel domestic hot water tank 300L 1~230V	0	0	0	0	0	0	0	0	0	0	0	0
*KHWE200*3Z2	Enamel domestic hot water tank 200L 2~400V	0	0	0	0	0	0	0	0	0	0	0	0
*KHWE300*3Z2	Enamel domestic hot water tank 300L 2~400V	0	0	0	0	0	0	0	0	0	0	0	0
*KHWET150*3V3	Wallmounted enamel domestic hot water tank 150L 1~230V	0	0	0	0	0	0	0	0	0	0	0	0
KHTS200AC	Stainless steel domestic hot water tank 200L	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)
KHTS260AC	Stainless steel domestic hot water tank 260L	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)
KHTSU200AC	Stainless steel domestic hot water tank 200L (only for UK)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)
KHTSU260AC	Stainless steel domestic hot water tank 260L (only for UK)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)
KRTW	Wired room thermostat option kit	0	0	0	0	0	0	0	0	0	0	0	0
KRTR	Wireless room thermostat option kit (incl. receiver)	0	0	0	0	0	0	0	0	0	0	0	0
*KRTETS	External temperature sensor option kit (3)	0	0	0	0	0	0	0	0	0	0	0	0

Remark: Other combinations are not guaranteed

(1) Input/Output PCB that provides two additional output connections (remote alarm and remote ON/OFF signalisation). In *KSOLHWAV1, the same digital I/O PCB as for *KRP1HB is already included
(2) It is not allowed to combine bottom plate heater and drain plug kit.
(3) *KRTETS can only be used in combination with *KRTR.
(4) A connection kit *KFMALTA is required.

Note:
E(B/D)L units include special equipment (insulation, heater sheet, . . .) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the E(B/D)H models may experience problems with severe ice build up on the aircooled coil. In case such conditions are expected, the E(B/D)L must be installed instead.

Kit availability for *KHW*

Reference	Description												
		#											
	*KHWE(T)#3(V3/Z2)	150A	200A	300A									
	*KHWS#3(V3/Z2)				150(A/B)	200(A/B)	300(A/B)						
	*KHWSU#3V3							150A	200A	300A	150B	200B	300B
*KUHWA	Option kit for UK *KHWSU 150~300*3V3	-	-	-	-	-	-	0	0	0	0	0	0
*KUHWB	Option kit 1 for UK *KHWSU 150~300*3V3 (4)	-	-	-	-	-	-	O(2)	O(2)	O(2)	0	0	0
*KUHW2WB	Option kit 2 for UK *KHWSU 150~300 3V3 (4)	-	-	-	-	-	-	O(2)	O(2)	O(2)	O(3)	O(3)	O(3)
*KSOLHWAV1	Solarkit (1)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)
*KSR3PA	Control panel	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)
*KSRDS1A	Pump station	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)	O(5)
*KWBSWW150	Wall bracket for *KHWS(U)150*)3V3 or *KSWW150V3*	-	-	-	0	-	-	0	-	-	0	-	-

Remark: Other combinations are not guaranteed

(1) Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.
(2) If installation on tank A version both kits are required
(3) Kit is only necessary when installing *KSOLHWAV1 on a UK tank B-series (*KHWSU(150/200/300)B3V3)
(4) *KUHWB = *KUHWA - (2 way valve and 2 way valve accessories)
*KUHW2WB = 2 way valve and 2 way valve accessories
(5) A digital I/O PCB wich is required when connecting the solar kit, is supplied with the solar kit

Kit availability for *KHTS*

Reference	Description				
		#			
	EKHTS*	200	260		
	EKHTSU*			200	260
*KFMALTA	Option kit for *KHTS*200~260 (1)	0	0	0	0
*KUHWHTA	Option kit for *KHTSU200~260	-	-	0	0

(1) This option kit is necessary to connect *KHTS* to *(B/D)(H/L)Q*BB*

3TW59259-1A

4 Capacity tables

4 - 1 Heating Capacity Tables

EDHQ-BB6W1

Maximum heating capacity - Peak values

	LWC [°C]	30		35		40		45		50		55	
	Tamb [°C]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]
E(D/B)(H/L)Q011*6W1	-20 (a)	5,86	2,30	5,51	2,51	5,39	2,75	5,25	3,04				
	-15	6,63	2,34	6,23	2,55	6,09	2,80	5,92	3,10	5,68	3,43		
	-7	8,13	2,38	7,66	2,60	7,51	2,86	7,32	3,17	7,03	3,52	6,53	3,90
	-2	9,28	2,38	8,76	2,61	8,61	2,88	8,41	3,20	8,11	3,55	7,55	3,94
	2	10,32	2,38	9,77	2,61	9,62	2,89	9,42	3,21	9,10	3,57	8,51	3,96
	7	11,80	2,36	11,20	2,60	11,06	2,88	10,87	3,21	10,53	3,58	9,88	3,98
	12	12,80	2,29	12,18	2,54	12,07	2,82	11,89	3,15	11,57	3,52	10,89	3,92
	15	13,84	2,26	13,20	2,51	13,10	2,80	12,93	3,14	12,60	3,51	11,89	3,91
	20	15,73	2,20	15,04	2,46	14,97	2,76	14,82	3,10	14,07	3,48	13,32	3,89
E(D/B)(H/L)Q014*6W1	-20 (a)	7,42	2,88	7,20	3,13	7,00	3,42	5,49	3,77				
	-15	8,29	2,94	8,00	3,20	7,72	3,50	7,60	3,85	7,57	4,25		
	-7	10,07	3,01	9,67	3,28	9,28	3,60	9,08	3,96	8,97	4,37	8,58	4,82
	-2	11,46	3,04	11,00	3,32	10,54	3,64	10,29	4,01	10,15	4,43	9,69	4,89
	2	12,75	3,05	12,23	3,34	11,72	3,66	11,43	4,05	11,27	4,47	10,75	4,93
	7	14,59	3,05	14,00	3,31	13,42	3,68	13,10	4,07	12,91	4,50	12,31	4,97
	12	15,44	2,96	14,84	3,25	14,23	3,58	13,91	3,96	13,72	4,39	13,09	4,85
	15	16,73	2,95	16,09	3,24	15,45	3,58	15,10	3,96	14,90	4,39	14,23	4,86
	20	19,09	2,91	18,38	3,22	17,67	3,56	17,30	3,95	16,60	4,39	15,87	4,86
E(D/B)(H/L)Q016*6W1	-20 (a)	8,47	3,29	8,34	3,58	8,22	3,92	6,50	4,30				
	-15	9,44	3,37	9,21	3,66	8,99	4,01	8,91	4,40	8,69	4,84		
	-7	11,44	3,46	11,08	3,76	10,73	4,12	10,53	4,52	10,17	4,99	9,81	5,50
	-2	13,01	3,50	12,58	3,81	12,14	4,18	11,89	4,59	11,43	5,06	11,00	5,58
	2	14,48	3,52	13,98	3,84	13,48	4,21	13,18	4,63	12,65	5,10	12,15	5,63
	7	16,58	3,54	16,00	3,81	15,42	4,25	15,06	4,67	14,45	5,15	13,86	5,68
	12	17,29	3,44	16,69	3,77	16,08	4,14	15,71	4,56	15,07	5,03	14,44	5,55
	15	18,75	3,44	18,10	3,77	17,45	4,15	17,05	4,56	16,36	5,04	15,68	5,57
	20	21,42	3,42	20,70	3,76	19,98	4,14	19,53	4,57	18,74	5,05	17,98	5,58

Maximum heating capacity - Integrated value

	LWC [°C]	30		35		40		45		50		55	
	Tamb [°C]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]	HC [kW]	PI [kW]
E(D/B)(H/L)Q011*6W1	-20 (a)	4,96	2,25	4,67	2,46	4,57	2,69	4,45	2,98				
	-15	5,61	2,29	5,27	2,50	5,16	2,75	5,01	3,04	4,81	3,36		
	-7	6,88	2,33	6,49	2,55	6,36	2,81	6,19	3,11	5,95	3,44	5,53	3,82
	-2	7,70	2,29	7,27	2,51	7,15	2,77	6,98	3,07	6,73	3,41	6,27	3,79
	2	8,57	2,28	8,11	2,51	7,99	2,78	7,82	3,09	7,56	3,43	7,06	3,81
	7	11,80	2,36	11,20	2,60	11,06	2,88	10,87	3,21	10,53	3,58	9,88	3,98
	12	12,80	2,29	12,18	2,54	12,07	2,82	11,89	3,15	11,57	3,52	10,89	3,92
	15	13,84	2,26	13,20	2,51	13,10	2,80	12,93	3,14	12,60	3,51	11,89	3,91
	20	15,73	2,20	15,04	2,46	14,97	2,76	14,82	3,10	14,07	3,48	13,32	3,89
E(D/B)(H/L)Q014*6W1	-20 (a)	6,31	2,79	6,13	3,03	5,96	3,32	4,67	3,65				
	-15	7,05	2,85	6,80	3,10	6,57	3,39	6,46	3,73	6,44	4,11		
	-7	8,57	2,92	8,23	3,18	7,89	3,49	7,72	3,84	7,63	4,23	7,30	4,67
	-2	9,11	2,76	8,74	3,01	8,38	3,30	8,18	3,64	8,07	4,02	7,70	4,43
	2	10,13	2,77	9,72	3,03	9,31	3,33	9,09	3,67	8,96	4,05	8,55	4,47
	7	14,59	3,05	14,00	3,31	13,42	3,68	13,10	4,07	12,91	4,50	12,31	4,97
	12	15,44	2,96	14,84	3,25	14,23	3,58	13,91	3,96	13,72	4,39	13,09	4,85
	15	16,73	2,95	16,09	3,24	15,45	3,58	15,10	3,96	14,90	4,39	14,23	4,86
	20	19,09	2,91	18,38	3,22	17,67	3,56	17,30	3,95	16,60	4,39	15,87	4,86
E(D/B)(H/L)Q016*6W1	-20 (a)	7,00	3,20	6,89	3,48	6,79	3,80	5,37	4,17				
	-15	7,80	3,27	7,61	3,55	7,43	3,89	7,37	4,27	7,18	4,70		
	-7	9,45	3,35	9,15	3,65	8,86	4,00	8,70	4,39	8,40	4,84	8,11	5,34
	-2	9,96	3,12	9,62	3,40	9,29	3,73	9,09	4,09	8,75	4,51	8,41	4,97
	2	11,08	3,14	10,69	3,43	10,31	3,76	10,08	4,13	9,68	4,55	9,29	5,02
	7	16,58	3,54	16,00	3,81	15,42	4,25	15,06	4,67	14,45	5,15	13,86	5,68
	12	17,29	3,44	16,69	3,77	16,08	4,14	15,71	4,56	15,07	5,03	14,44	5,55
	15	18,75	3,44	18,10	3,77	17,45	4,15	17,05	4,56	16,36	5,04	15,68	5,57
	20	21,42	3,42	20,70	3,76	19,98	4,14	19,53	4,57	18,74	5,05	17,98	5,58

SYMBOLS:

HC	Heating capacity at maximum operating frequency, measured acc.EN14511
PI	Power input, measured acc.EN14511
LWC	Leaving Water Condensor temperature
Tamb	Ambient temperature; RH = 85%

NOTES:

- For the model with heatertape (*(D/B)LQ): when ambient temperature becomes lower than 'X': bottomplate heater power input to be added = 95W
  1) For AA models: 'X' = 4°C
  2) For BA models: 'X' = [F-02] = BPH ON temp (default = 3°C): for more details see installation manual of indoor unit

NOTES

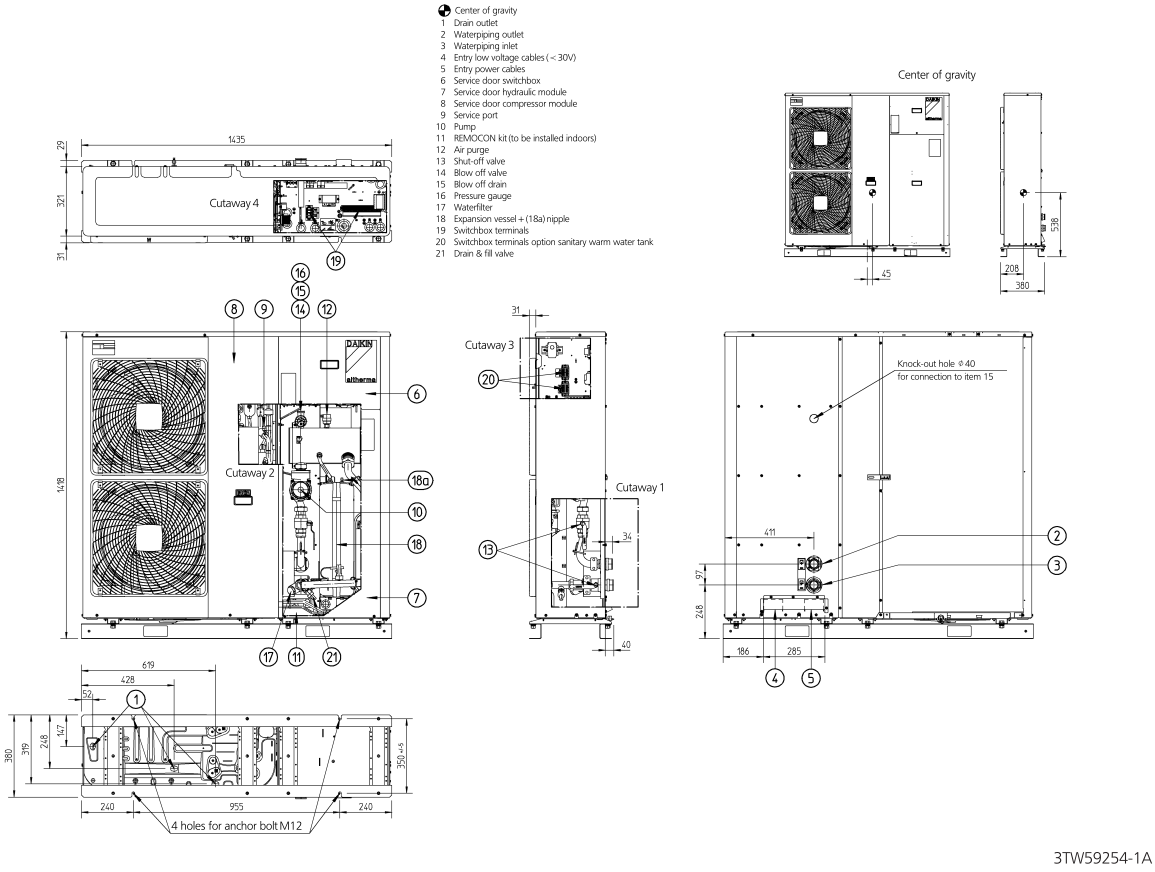
(a) only E(D/B)L*

3TW58012-1D

5 Dimensional drawings

5 - 1 Dimensional Drawings

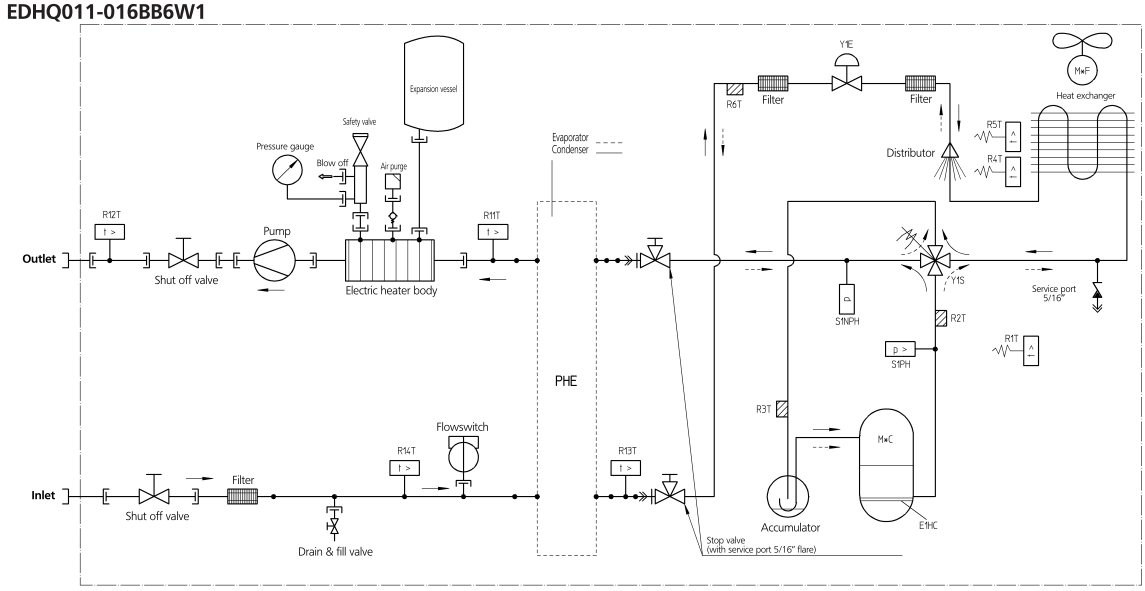
EDHQ011-016BB6W1



6 Piping diagrams

6 - 1 Piping Diagrams

EDHQ011-016BB6W1



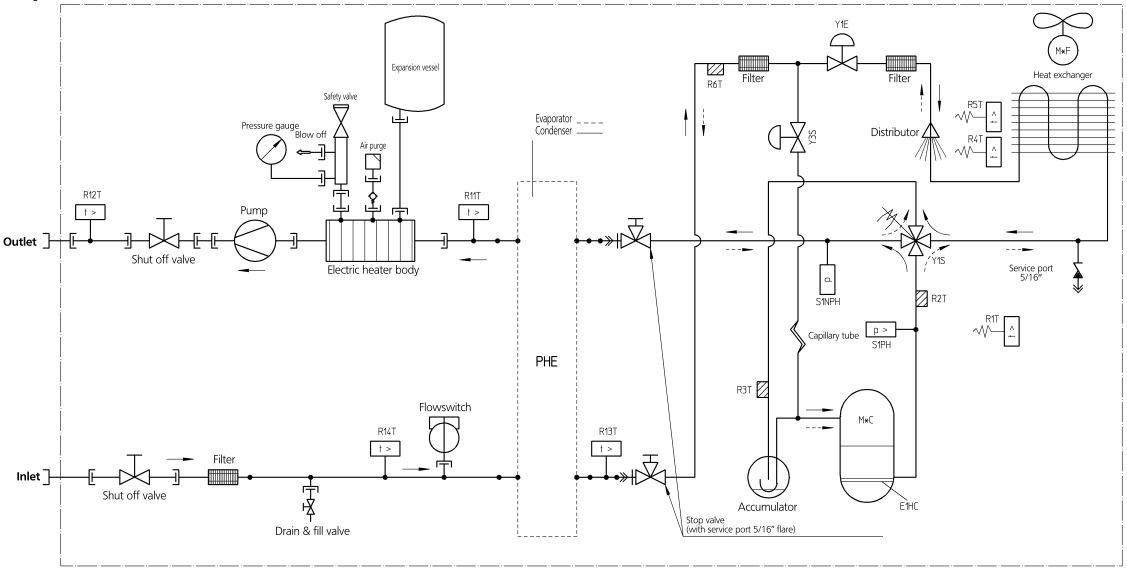
R1T	: Thermistor (Air)	Y1S	: 4-way valve
R2T	: Thermistor (discharge)	Y3S	: Injection valve
R3T	: Thermistor (Suction)	S1PH	: High pressure switch
R4T	: Thermistor (Liquid 1)	M*F	: Fan motor
R5T	: Thermistor (middle)	M*C	: Compressor
R6T	: Thermistor (Liquid 2)	R11T	: Outlet water heat-exchanger thermistor
S1NPH	: Pressure sensor	R12T	: Outlet water backup heater thermistor
Y1E	: Electronic expansion valve	R13T	: Refrigerant liquid side thermistor
E1HC	: Crankcase heater	R14T	: Inlet water thermistor

Heating
Cooling

Check valve | Flare connection | Screw connection | Flange connection | Pinched pipe | Spinned pipe

3TW59255-1

EDHQ011-016BB6W1



R1T	: Thermistor (Air)	Y1S	: 4-way valve
R2T	: Thermistor (discharge)	Y3S	: Injection valve
R3T	: Thermistor (Suction)	S1PH	: High pressure switch
R4T	: Thermistor (Liquid 1)	M*F	: Fan motor
R5T	: Thermistor (middle)	M*C	: Compressor
R6T	: Thermistor (Liquid 2)	R11T	: Outlet water heat-exchanger thermistor
S1NPH	: Pressure sensor	R12T	: Outlet water backup heater thermistor
Y1E	: Electronic expansion valve	R13T	: Refrigerant liquid side thermistor
E1HC	: Crankcase heater	R14T	: Inlet water thermistor

Heating
Cooling

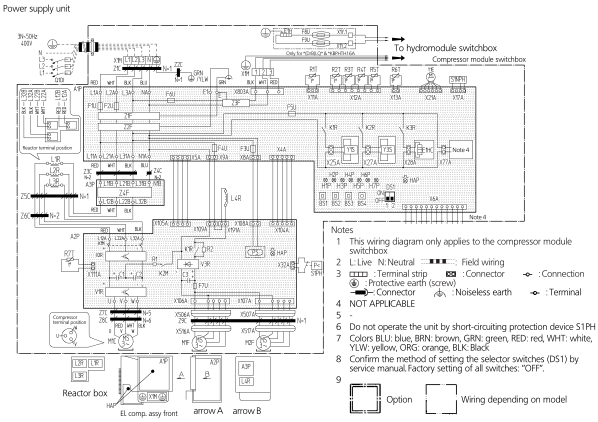
Check valve | Flare connection | Screw connection | Flange connection | Pinched pipe | Spinned pipe

3TW59375-1

7 Wiring diagrams

7 - 1 Wiring Diagrams - Three Phase

EDHQ011-016BB6W1



Notes
1 This wiring diagram only applies to the compressor module switchbox
2 L: Live N: Neutral : Field wiring
3 : Terminal strip : Connector : Connection : Protective earth (screw) Connector : Noiseless earth : Terminal
4 NOT APPLICABLE
5 -
6 Do not operate the unit by short-circuiting protection device S1PH
7 Colors BLU: blue, BRN: brown, GRN: green, RED: red, WHT: white, YLW: yellow, ORG: orange, BLK: Black
8 Confirm the method of setting the selector switches (DS1) by service manual. Factory setting of all switches: "OFF".
9 Option Wiring depending on model

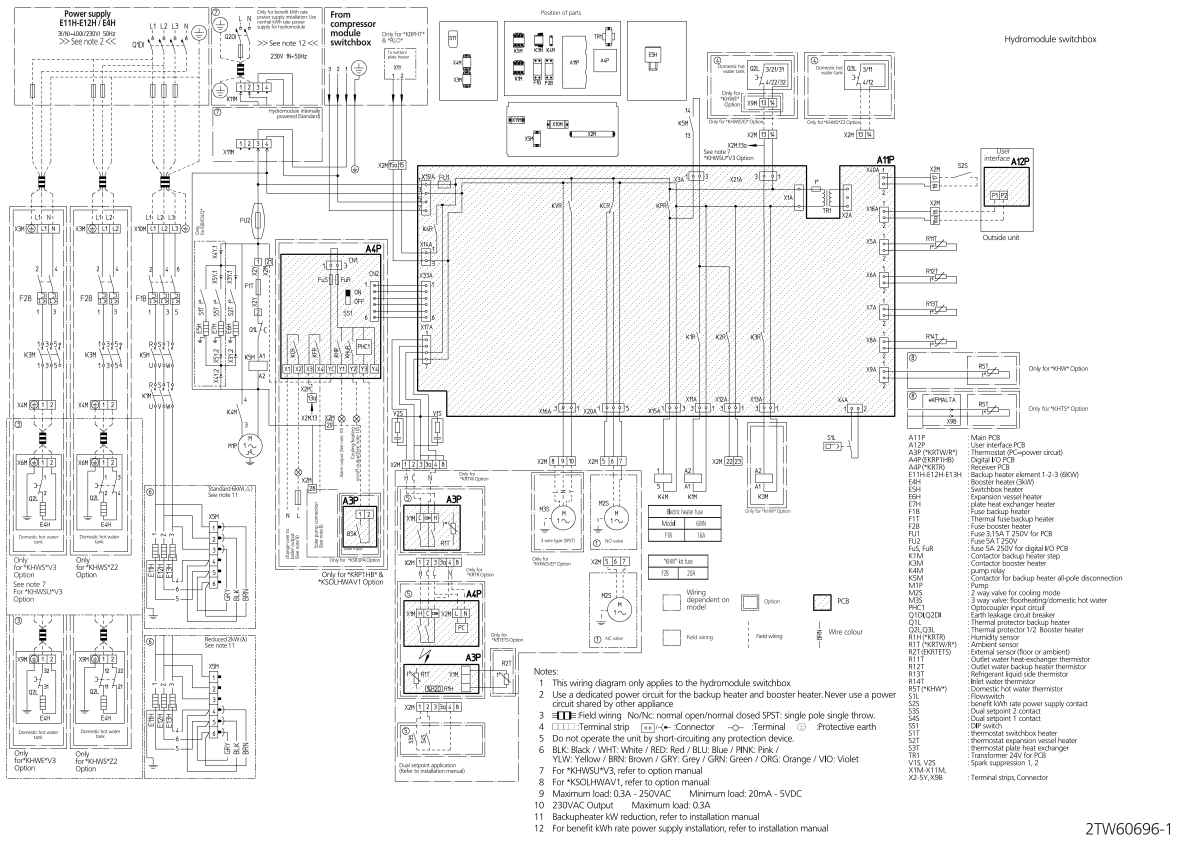
A1P	Printed circuit board
A2P	Printed circuit board (INV)
A3P	Printed circuit board (Noise filter)
BS1~BS4	Push button switch
C1-C4	Capacitor
DS1	DIP switch
E1HC	Crankcase heater
E1H	Bottomplate heater
F1U	Fuse (31.5A 250V)
F2U	Fuse (31.5A 250V)
F3U	Fuse (T 6.3A/250V)
F4U	Fuse (T 6.3A/250V)
F5U	Fuse (T 6.3A/250V)
F6U	Fuse (T 6.3A/250V)
F7U	Fuse (T 5.0A/250V)
F8U, F9U	Fuse (F 1.0A/250V)
HAP (A1P)	Pilot lamp (Service monitor-green)
HAP (A2P)	Pilot lamp (Service monitor-green)
H1P~7P (A1P)	Pilot lamp (service monitor-orange)
K1M~K2M	Magnetic contactor
K1R (A1P)	Magnetic relay (Y1S)
K1R (A2P)	Magnetic relay
K2R (A1P)	Magnetic relay (Y2S)
K3R (A1P)	Magnetic relay (E1HC)
L1R~L3R	Reactor
L4R	Reactor (For outdoor fan motor)
M1C	Motor (Compressor)
M1F	Motor (Fan) (upper)
M2F	Motor (Fan) (lower)
PS	Switching power supply
R1~R4	Resistor
R1T	Thermistor (Air)
R2T	Thermistor (Discharge)
R3T	Thermistor (Suction)
R4T	Thermistor (Heat exchanger)
R5T	Thermistor (heat exchanger middle)
R6T	Thermistor (Liquid)
R7T	Thermistor (Fin)
S1NPH	Pressure sensor
S1PH	Pressure switch (high)
V1R~V2R	Power module
V3R	Diode module
X1M	Terminal strip
Y1E	Electronic expansion valve
Y1S	Solenoid valve (4 way valve)
Y3S	Solenoid valve
Z1C~Z9C	Noise filter
Z1F~Z4F	Noise filter
Q1DI	Earth leakage circuit breaker
Optional connector	
X6A	Connector
X77A	Connector
X1Y	Connector

2TW59376-1

7 Wiring diagrams

7 - 1 Wiring Diagrams - Three Phase

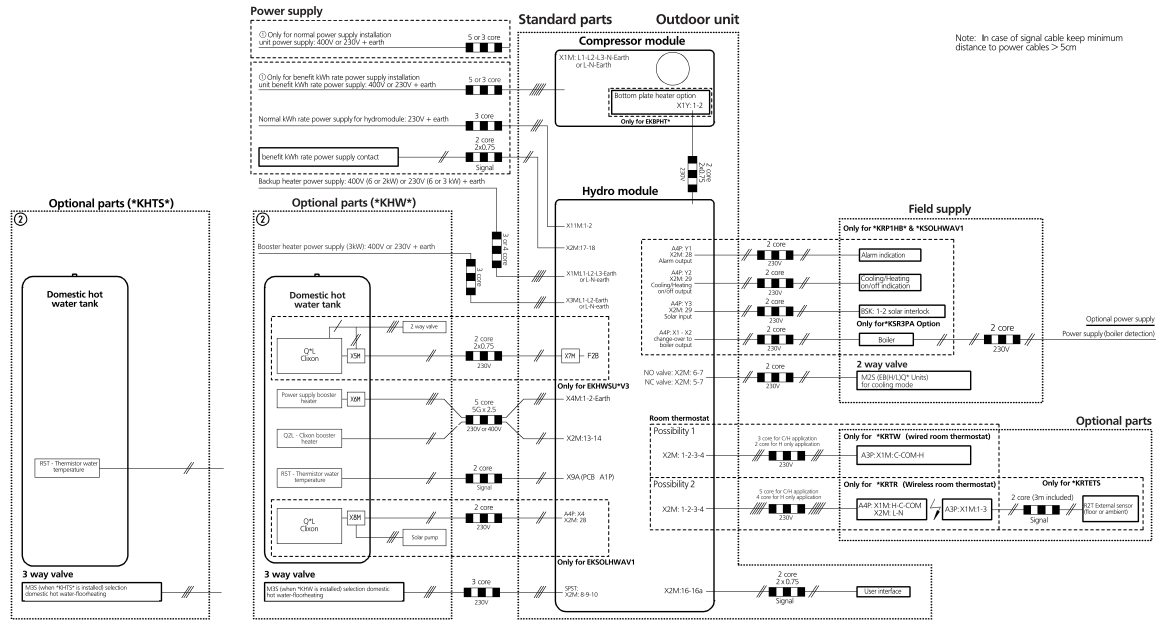
EDHQ011-016BB6W1


Power supply
E11H-E12H / E6H
3N~400/230V 50Hz
From compressor module switchbox
Hydromodule switchbox
Outside unit
A1P
A2P
A3P
A4P
Only for *KHW* Option
Only for *KHTS* Option
Only for *KRP1HB* & *KSOLHWAV1 Option
Standard (kW)(A) See note 11
Reduced (kW)(A) See note 11
Only for *KHWS*V3 Option See note 7 For *KHWSU*V3 Option
Only for *KHWS*22 Option
Only for *KHNE*V3 Option
Only for *KHWS*22 Option
Wiring dependent on model
Option
PCB
Field wiring
Wire colour
Notes:
1 This wiring diagram only applies to the hydromodule switchbox
2 Use a dedicated power circuit for the backup heater and booster heater. Never use a power circuit shared by other appliance
3 Field wiring No/NC: normal open/normal closed SPST: single pole single throw.
4 :Terminal strip :Connector :Terminal :Protective earth
5 Do not operate the unit by short-circuiting any protection device.
6 BLK: Black / WHT: White / RED: Red / BLU: Blue / PINK: Pink / YLW: Yellow / BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / VIO: Violet
7 For *KHWSU*V3, refer to option manual
8 For *KSOLHWAV1, refer to option manual
9 Maximum load: 0.3A - 250VAC Minimum load: 20mA - 5VDC
10 230VAC Output Maximum load: 0.3A
11 Backupheater kW reduction, refer to installation manual
12 For benefit kWh rate power supply installation, refer to installation manual
A11P : Main PCB
A12P : User interface PCB
A3P (*KRTW/R*) : Thermostat (PC=power circuit)
A4P (EKRP1HB) : Digital I/O PCB
A4P (*KRTR) : Receiver PCB
E11H-E12H-E13H : Backup heater element 1-2-3 (6KW)
E6H : Booster heater (3kW)
E6H : Switchbox heater
E6H : Expansion vessel heater
E7H : plate heat exchanger heater
F1B : Fuse backup heater
F1T : Thermal fuse backup heater
F2B : Fuse booster heater
FU1 : Fuse 3.15A T 250V for PCB
FU2 : Fuse 5A T 250V
FuS, FuR : fuse 5A 250V for digital I/O PCB
K1M : Contactor backup heater step
K3M : Contactor booster heater
K4M : pump relay
K5M : Contactor for backup heater all-pole disconnection
M1P : Pump
M2S : 2 way valve for cooling mode
M3S : 3 way valve: floorheating/domestic hot water
PHC1 : Optocoupler input circuit
Q1DI,Q2DI : Earth leakage circuit breaker
Q1L : Thermal protector backup heater
Q2L,Q3L : Thermal protector 1/2 Booster heater
R1H (*KRTR) : Humidity sensor
R1T (*KRTW/R*) : Ambient sensor
R2T (EKRTETS) : External sensor (floor or ambient)
R11T : Outlet water heat-exchanger thermistor
R12T : Outlet water backup heater thermistor
R13T : Refrigerant liquid side thermistor
R14T : Inlet water thermistor
RST (*KHW*) : Domestic hot water thermistor
S1L : Flowswitch
S2S : benefit kWh rate power supply contact
S3S : Dual setpoint 2 contact
S4S : Dual setpoint 1 contact
SS1 : DIP switch
S1T : thermostat switchbox heater
S2T : thermostat expansion vessel heater
S3T : thermostat plate heat exchanger
TR1 : Transformer 24V for PCB
V1S, V2S : Spark suppression 1, 2
X1M-X11M, X2-5Y, X9B : Terminal strips, Connector
2TW60696-1

8 External connection diagrams

8 - 1 External Connection Diagrams

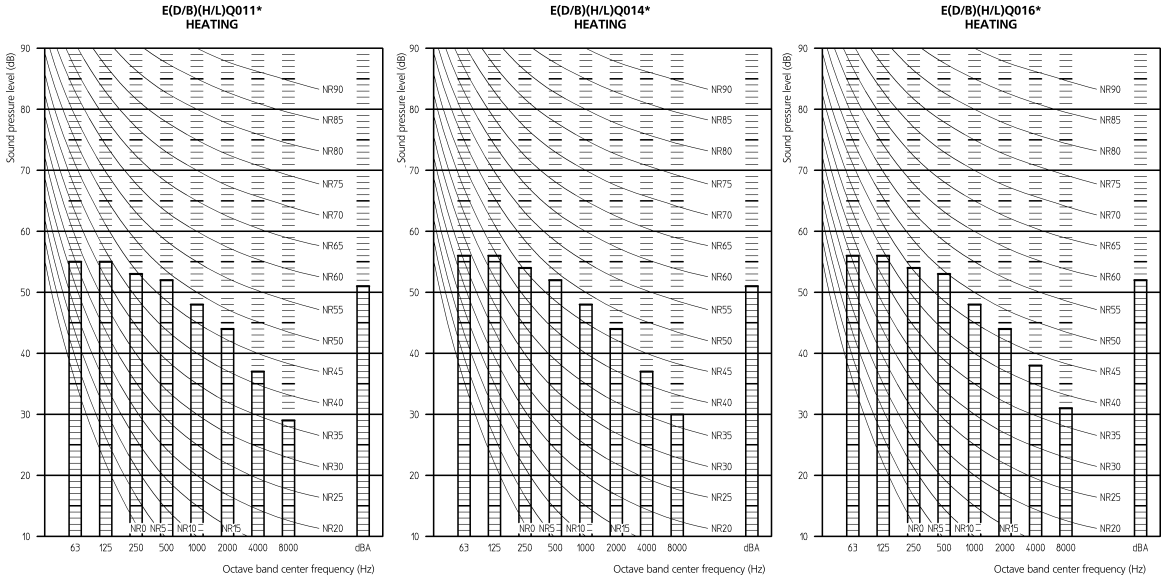
EDHQ011-016BB6W1 **Electrical connection diagram Altherma** For more details please check unit wiring diagram



9 Sound data

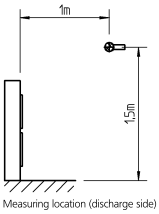
9 - 1 Sound Pressure Spectrum - Heating

EDHQ011-016BB6W1



Notes:

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



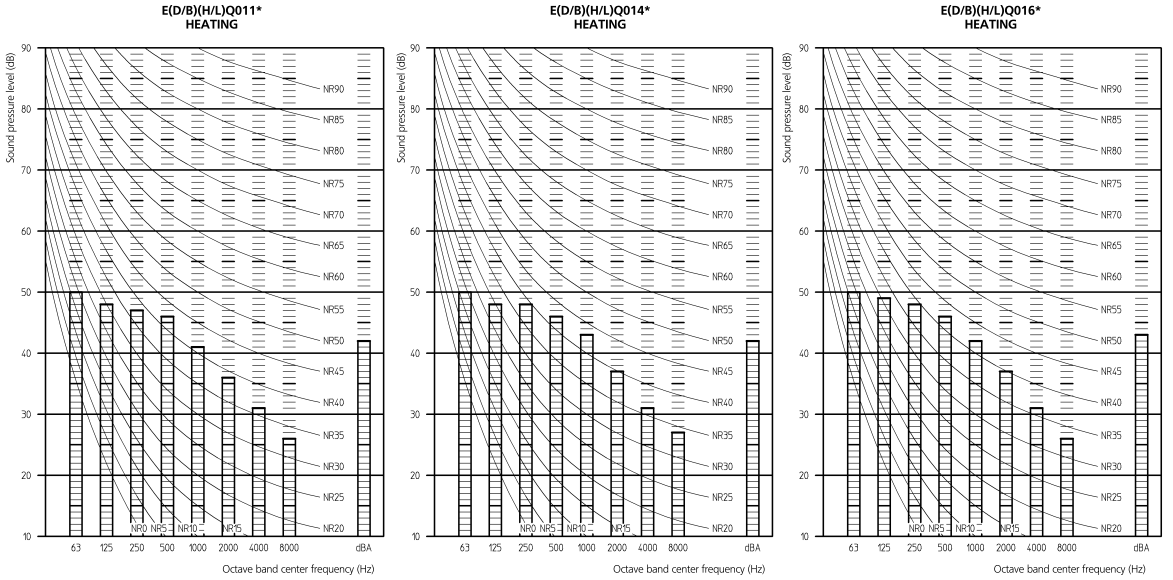
Measuring location (discharge side)

3TW58017-2

9 Sound data

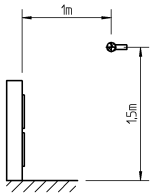
9 - 2 Sound Pressure Spectrum Quiet Mode

EDHQ011-016BB6W1



Notes:

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20µPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



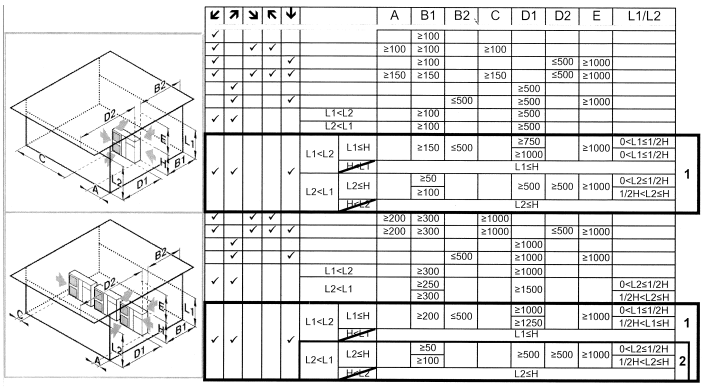
3TW58017-4

10 Installation

10 - 1 Installation Method

EDHQ011-016BB6W1

A. Non stacked installation



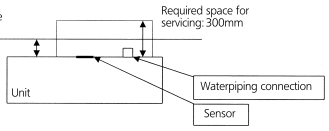
↙	↗	↘	↖	↓			A	B1	B2	C	D1	D2	E	L1/L2	
✓								≥100							
✓		✓	✓				≥100	≥100		≥100					
✓				✓				≥100				≤500	≥1000		
✓		✓	✓	✓			≥150	≥150		≥150		≤500	≥1000		
	✓										≥500				
	✓			✓					≤500		≥500		≥1000		
✓	✓				L1<L2			≥100			≥500				
					L2<L1			≥100			≥500				
✓	✓			✓	L1<L2	L1≤H		≥150	≤500		≥750		≥1000	0<L1≤1/2H	
						H<L1					≥1000			0<L1≤1/2H	
											L1≤H				1
					L2<L1	L2≤H		≥50			≥500	≥500	≥1000	0<L2≤1/2H	
						H<L2		≥100						1/2H<L2≤H	
											L2≤H				
✓		✓	✓				≥200	≥300		≥1000					
✓		✓	✓	✓			≥200	≥300		≥1000		≤500	≥1000		
	✓										≥1000				
	✓			✓					≤500		≥1000		≥1000		
✓	✓				L1<L2			≥300			≥1000				
					L2<L1			≥250			≥1500			0<L2≤1/2H	
								≥300						1/2H<L2≤H	
✓	✓			✓	L1<L2	L1≤H		≥200	≤500		≥1000		≥1000	0<L1≤1/2H	
						H<L1					≥1250			1/2H<L1≤H	1
											L1≤H				
					L2<L1	L2≤H		≥50			≥500	≥500	≥1000	0<L2≤1/2H	
						H<L2		≥100						1/2H<L2≤H	2
											L2≤H				

Legend Unit: mm

- Suction side obstacle
- Discharge side obstacle
- Left side obstacle
- Right side obstacle
- Top side obstacle
- ✓ Obstacle is present

This situation is not allowed.

Note:
100mm is min. space required for correct operation

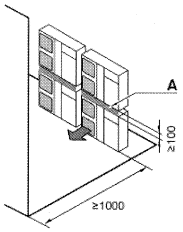


1 In these cases, close the bottom of the installation frame to prevent discharged air from being bypassed.

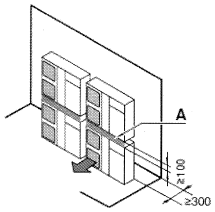
2 In these cases, only 2 units can be installed.

B. Stacked installation

1. Obstacles exist in front of the outlet side



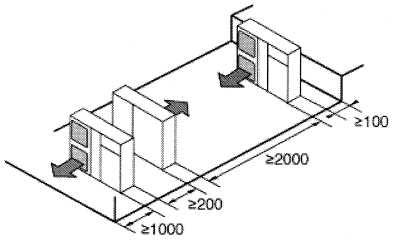
2. Obstacles exist in front of the air inlet



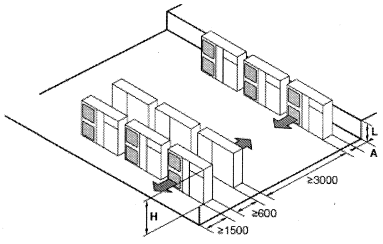
Do not stack more than one unit.
About 100mm is required as the dimension for laying the upper outdoor unit's drain pipe.
Get the portion A sealed so that air from the outlet does not bypass.

C. Multiple-row installation

1. Installation of one unit per row



2. Installing multiple units (2 units or more) in lateral connection per row



Relation of dimensions of H, A, and L are shown in the table below.

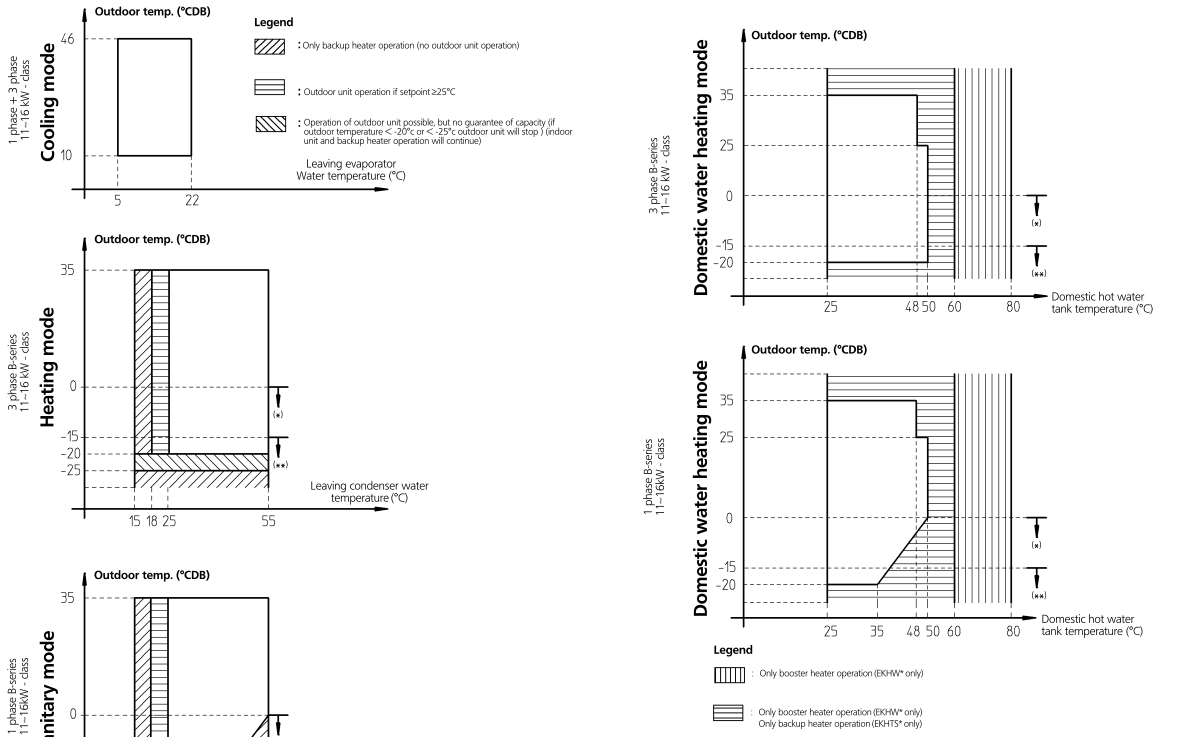
	L	A
L ≤ H	0 < L ≤ 1/2 H	250
	1/2 H < L	300
H < L	Installation not allowed	

3TW58019-6B

11 Operation range

11 - 1 Operation Range

EDHQ011-016BB6W1



(*) EDLQ/EBLQ units include special equipment (insulation, heater, sheet, ...) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions. In such conditions the EDHQ/EBHQ models may experience problems with severe ice build up on the aircooled coil. In case such conditions are expected, the EDLQ/EBLQ models must be installed instead. These models contain countermeasures (insulation, heater sheet, ...) to prevent freeze up.

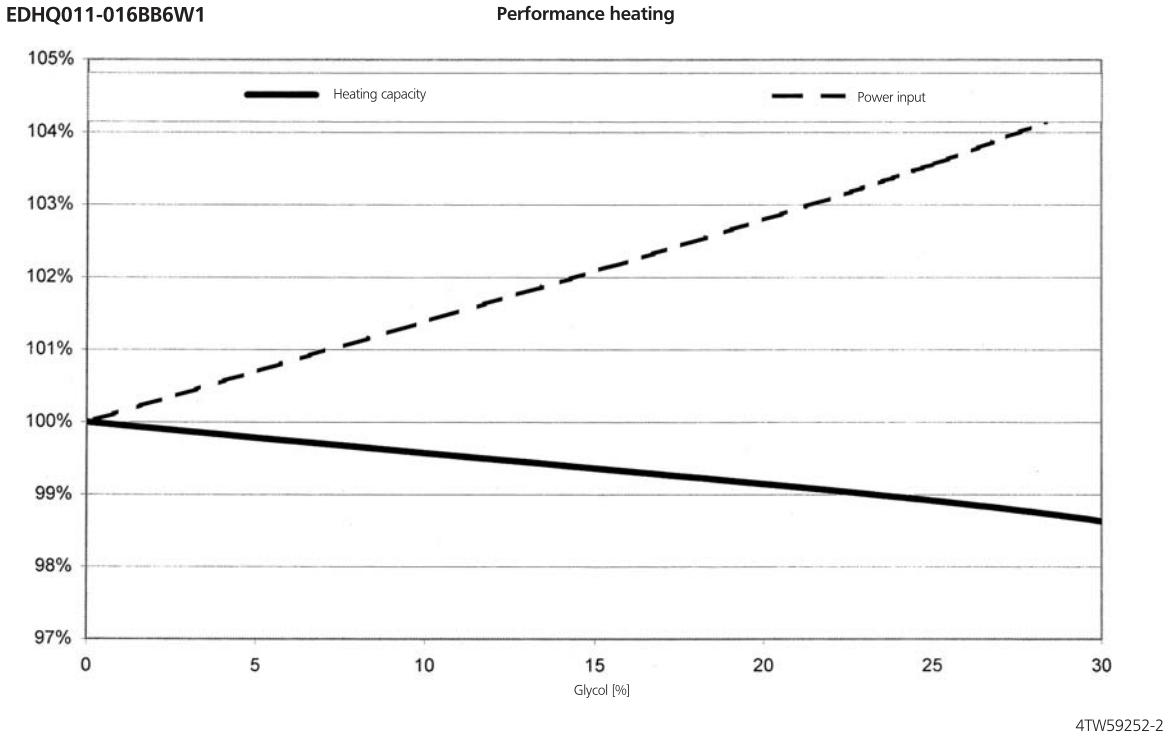
Both E(D/B)LQ and E(D/B)HQ units have a freeze prevention function using the pump and backup heater to keep the water system safe from freezing in all conditions. In case accidental or intentional power shutdown is likely to happen, we recommend to use glycol.

(**) Only EDLQ/EBLQ models allowed.

3TW60693-1

11 Operation range

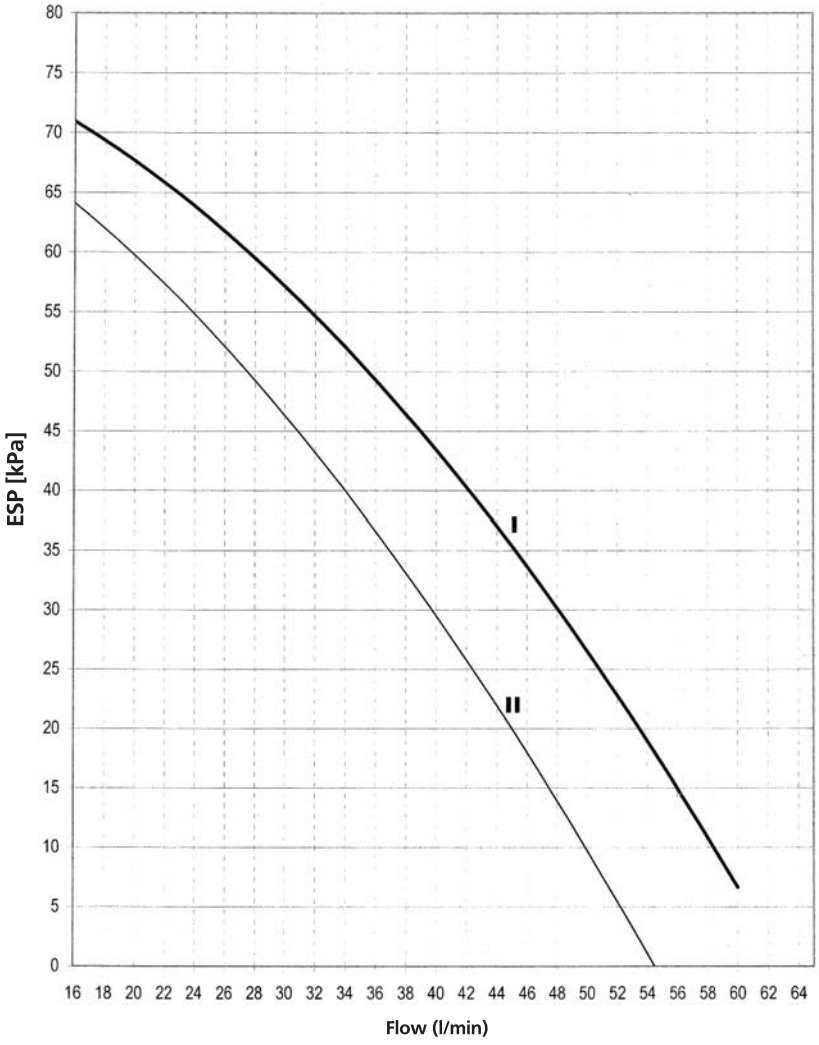
11 - 2 Correction Factors



12 Hydraulic performance

12 - 1 Static Pressure Drop Unit

EDHQ011-016BB6W1



I: High speed
II: medium speed

ESP: External static pressure
Flow: waterflow through the unit

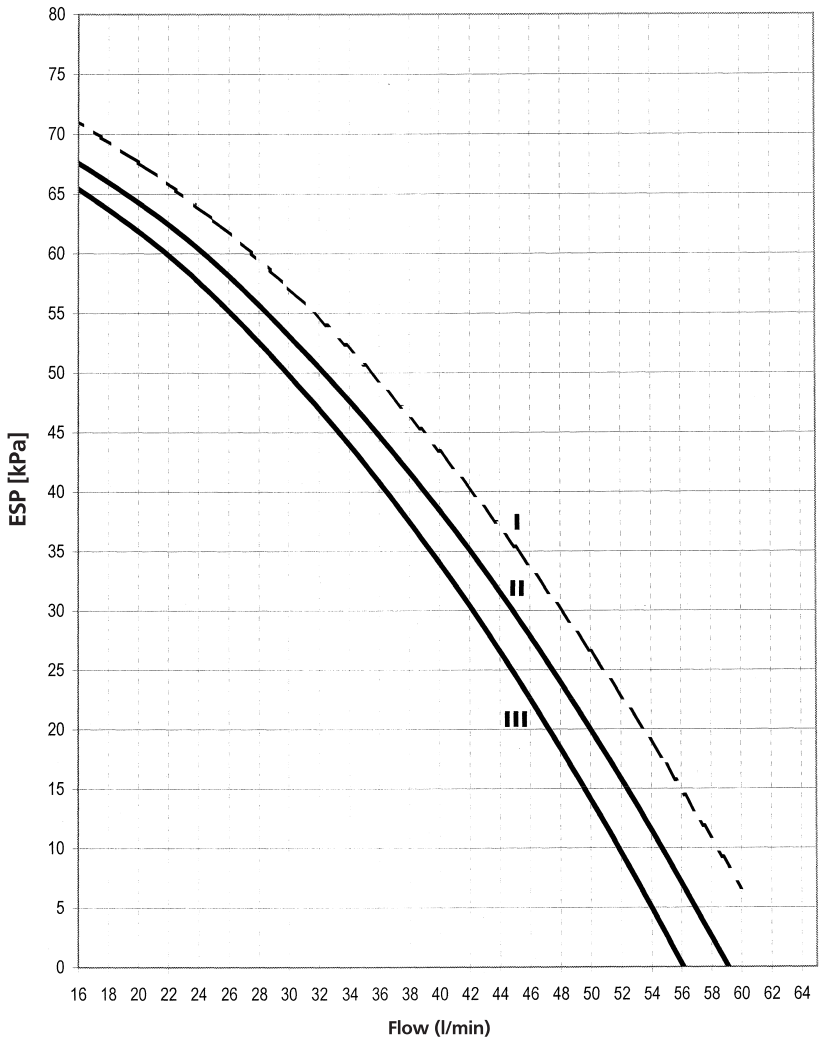
Caution:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW59259-2

12 Hydraulic performance

12 - 1 Static Pressure Drop Unit

EDHQ011-016BB6W1



Values only valid for high speed setting

I: Water
II: Water / Propylene glycol (25%) at20°C
III: Water / Propylene glycol (25%) at 5°C

ESP: External static pressure
Flow: waterflow through the unit

Caution:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW59259-4

Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

Daikin Europe N.V. participates in the Eurovent Certification programme for Air conditioners (AC), Liquid Chilling Packages (LCP) and Fan coil units (FCU), Check ongoing validity of certificate online: www.eurovent-certification.com or using: www.certiflash.com"

The present leaflet is drawn up by way of information only and does not constitute an offer binding upon Daikin Europe N.V.. Daikin Europe N.V. has compiled the content of this leaflet to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Europe N.V. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this leaflet. All content is copyrighted by Daikin Europe N.V.

BARCODE

Daikin products are distributed by:

DAIKIN EUROPE N.V. Naamloze Vennootschap - Zandvoordestraat 300, B-8400 Oostende - Belgium - www.daikin.eu - BE 0412 120 336 - RPR Oostende

EEDEN12-725 • 07/12 • Copyright Daikin
The present publication supersedes EEDEN11-725